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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,070	01/23/2002	Oliver C. Mullins	60.1442/SDR-064	7476

7590 03/02/2004

Schlumberger-Doll Research
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EXAMINER

STAFIRA, MICHAEL PATRICK

ART UNIT PAPER NUMBER

2877

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/055,070	Applicant(s) MULLINS ET AL.	
	Examiner Michael P. Stafira	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>6/17/2002</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: On page 1, lines 22-28 please insert current Serial numbers and/or patent numbers if available. Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-17, 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Ramos et al. ('191).

Claim 1

Ramos et al. ('191) discloses an injector which injects an oil fluorescence quenching marker into the oil of the fluid stream at a first location (See Abstract); a light source (Fig. 2, Ref. 40) which subjects the fluid stream to light at a wavelength which will cause the in the fluid stream to naturally fluoresce (See Abstract); a fluorescence detection (Fig. 2, Ref. 44) apparatus which detects at a second location a fluorescence signal from the oil in the fluid stream flowing past said second location (Col. 12, lines 6-38).

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Claim 3

Ramos et al. ('191) further discloses the quenching marker is a solute (dye) dissolved in a solvent (water) (Col. 11, lines 32-45).

Claim 4

The reference of Ramos et al. ('191) further discloses at least one of said solute (dye) and said solvent (water) deactivates electronically excited states of aromatic molecules in the oil (Col. 11, lines 32-45).

Claim 5

Ramos et al. ('191) discloses at least one of said solute (dye) and said solvent (water) absorbs said light said wavelength from said light source (Col. 11, lines 32-67).

Claim 6

The reference of further discloses a processor coupled to the fluorescence detection apparatus, said processor determining a velocity of the oil (Col. 12, lines 25-40).

Claim 7

Ramos et al. ('191) discloses an injector injects said oil fluorescence quenching marker at a first time (Col. 13, lines 27-30), said fluorescence detection apparatus detects said fluorescence signal over a period of time including a second time after said first time, said second time including a peak in said fluorescence signal indicative of arrival of said oil fluorescence quenching marker, and said processor determines said velocity by dividing a distance between said first location and said second location by a difference in time from said first time said second time (Col. 13, lines 27-56).

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Claim 8

The reference of Ramos et al. ('191) discloses the oil is flowing in a well having a diameter and said first location and said second location are separated by a distance d which is greater than $10D$ (Col. 12, lines 6-27).

Claim 9

An apparatus according to claim 8, wherein: said distance d is less than $100D$ (Col. 12, lines 6-27).

Claim 10

Ramos et al. ('191) discloses said fluorescence detection apparatus comprises an optical probe arranged in the fluid stream (Col. 7, lines 32-53), a fiber optic coupled to the probe, an optical filter coupled to said fiber optic, and a fluorescence detector coupled to said optical filter (Col. 6, lines 25-28).

Claim 11

The reference of Ramos et al. ('191) further discloses said fluorescence detection apparatus comprises a plurality of optical probes arranged in the fluid stream (Col. 6, lines 29-31).

Claim 12

Ramos et al. ('191) discloses a fluid stream is in a well, and wherein: said injector is located on a logging tool suspended in the well (Col. 5-6, lines 60-3).

Claim 13

Ramos et al. ('191) discloses said fluorescence detection apparatus includes an optical probe arranged in the fluid stream and coupled to said logging tool (Col. 5-6, lines 60-3).

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Claim 14

The reference of Ramos et al. ('191) further discloses said logging tool includes a spring bow, and said fluorescence detection apparatus includes a plurality of optical probes arranged in the fluid stream and coupled to said spring bow (Col. 6, lines 4-16).

Claim 15

Ramos et al. ('191) discloses said light source is coupled to said logging tool (Col. 5-6, lines 60-16).

Claim 16

Ramos et al. ('191) discloses a method of injecting at a first time an oil fluorescence quenching marker into the oil of the fluid stream at a first location (See Abstract); subjecting the fluid stream to light at a wavelength which will cause the oil in the fluid stream to naturally fluoresce (Col. 11, lines 32-60); detecting over a period of time at a second location a fluorescence signal from the oil in the fluid stream flowing past said detector, said period of time including a second time when the fluorescence of the oil in the fluid stream is least partially quenched by said quenching marker (Col. 13, lines 25-56).

Claim 17

Ramos et al. ('191) further discloses determining a velocity of the oil as a function of said first time, said second time, said first location and said second location (Col. 13, lines 25-56).

Claim 19

Ramos et al. ('191) discloses quenching marker is a solute (dye) dissolved in a solvent (water) (Col. 11, lines 32-60).

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Claim 20

The reference of Ramos et al. ('191) further discloses at least one of said solute (dye) and said solvent (water) deactivates electronically excited states of aromatic molecules in the oil (Col. 11, lines 32-60).

Claim 21

Ramos et al. ('191) discloses at least one of said solute (dye) and said solvent (water) absorbs said light at said wavelength (Col. 11, lines 32-67).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramos et al. ('191) in view of Tsien et al. ('205).

Claims 2, 18

Ramos et al. ('191) substantially teaches the claimed invention except that it does not show the quenching marker (dye) is chosen from Europium tris. Tsien et al. ('205) shows that it is known to provide dye that is made from Europium tris for a fluorescence marker. It would have been obvious to combine the device of Ramos et al. ('191) with the Europium tris of Tsien et al. ('205) for the purpose of providing a europium for pairing with suitable different acceptors,


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which allows the europium to be used with different measurement samples so as to be used in different applications.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 571-272-2430. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Michael P. Stafira
Primary Examiner
Art Unit 2877

February 17, 2004